

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
In-line cable voltage regulator (ILCVR) , I-801 ----- 0801-112983 (1)	2/2	801FM02Z Short in VR input. Short in VR input wiring or connector, degraded insulation or contamination.	END ITEM: Loss of electrical power to thermo-foil heaters and excessive current draw. GFE INTERFACE: Loss of active heating in glove fingertip area and excessive current draw. MISSION: Terminate EVA. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Minutes. TIME AVAILABLE: N/A TIME REQUIRED: N/A REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	A. Design - The ILCVR consists of two (2) Lemo connectors, a stainless steel block and a cable assembly. The cable assembly is constructed of insulated 24 ga. soft copper wire P/N M27500-24RC3S06, which complies with MIL-C-27500. The cable assembly is attached to the block via screws at the voltage regulator (VR) tabs. Heat shrink on the cable assembly is polyolefin and is used as an insulator and strain relief. Hysol EA934NA epoxy resin is used to pot the VR's, capacitors, and a portion of the cable assembly to provide for thermal transfer of heat from the VR's to the block and for strain relief of the wires. The connectors are LEMO series K connectors which are environmental connectors with triple wall construction to provide water and dust resistance. The LEMO connectors utilize a "QuickLok" feature that assures connection when the lock is engaged. The locking mechanism is protected by a rugged outer shell, eliminating accidental disconnections and damage to the locking mechanism, cable, or contacts. The connectors have a contact arrangement of five pins and are mechanically keyed with an alignment key on the shell which prevents errors in alignment. The contact terminations are crimps, performed per NHB 5300.4 3(H) by NASA certified technicians. A crafted metal collet type strain relief is provided to secure the cable around its circumference preventing accidental damage to the connection if the cable is stressed. In addition, a shrink tubing strain relief is placed over the end of the LEMO connector at the junction of the cable to the connector to provide additional strain relief. The connectors meet the electrical requirements for both voltage and current derating per MIL-STD-975. The 2/2 criticality is based on the NASA assigned criticality of 3/2R for the REBA. B. Test - Acceptance: See Inspection. Certification: The requirements of significance and accompanying certification rationale for the ILCVR are documented in ILC EM 01-0008 and HS EMUM1-0597. C. Inspection - The cable connections will be checked for continuity and the lines that are not connected to the regulators will be checked for insulation resistance. Prior to delivery, after final assembly is complete, the unit will be checked again for continuity, and insulation breakdown. The ILCVR will then undergo a power up test at 14.0 VDC loaded with 55+/-5 ohms for at least 30 minutes at room ambient pressure and temperature. Six thermal cycle / environmental stress screening test will be performed for each of the ILCVR assembly that has the burn-in test. For those ILCVR units that were flown per type "A" TPS will be acceptable without these thermal cycles and the rationale will be documented in the Hamilton-Sundstrand EMUM1-0658. The connectors undergo 100% visual inspection when received from vendor. Crimp joints are visually inspected by Government Quality Assurance Inspectors when fabricated. D. Failure History -

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		801FM02Z		None. E. Ground Turnaround - ILCVR will be checked for continuity and electrical function per USA EMU processing and support procedure for voltage regulator P528/EPSP-0-33 F. Operational Use - 1. Crew Response - Pre-EVA/Post EVA: Troubleshoot problem. If no success, EMU no-go for EVA. EVA: If loss of fingertip heating occurs in both gloves, turn off power from battery, terminate EVA. 2. Special Training - None. 3. Operational Considerations - Not Applicable.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-106 GLOVE ASSEMBLY
CRITICAL ITEM LIST (CIL)

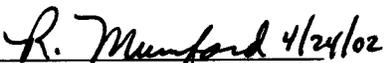
EMU CONTRACT NO. NAS 9-97150

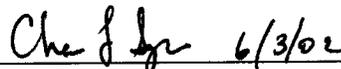
Prepared by: 
HS - Project Engineering

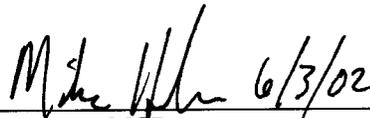
Approved by:  22mar02
NASA - SSA/SSM

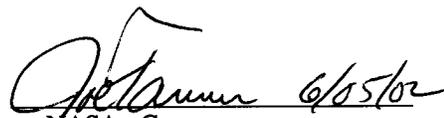

HS - Reliability

 5/23/02
NASA - EMU/SSM

 4/24/02
HS - Engineering Manager

 6/3/02
NASA - S & MA

 6/3/02
NASA - MOD

 6/5/02
NASA - Crew

 6/3/02
NASA - Program Manager